

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
22 September 2005 (22.09.2005)

PCT

(10) International Publication Number  
**WO 2005/086874 A3**

(51) International Patent Classification<sup>7</sup>: **A61B 5/00**

(21) International Application Number:

PCT/US2005/007829

(22) International Filing Date: 11 March 2005 (11.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/552,660 11 March 2004 (11.03.2004) US

(71) Applicant (for all designated States except US):  
**MEDRAD, INC.** [US/US]; One Medrad Drive, Indianapolis, PA 15051 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **UBER, Arthur, E., III** [US/US]; 7426 Ben Hur Street, Pittsburgh, PA 15208 (US). **GRIFFITHS, David, M.** [US/US]; 629 Kirtland Street, Pittsburgh, PA 15208 (US). **HIRSCHMAN, Alan, D.** [US/US]; 101 Candlewyck Drive, Glenshaw, PA 15116 (US).

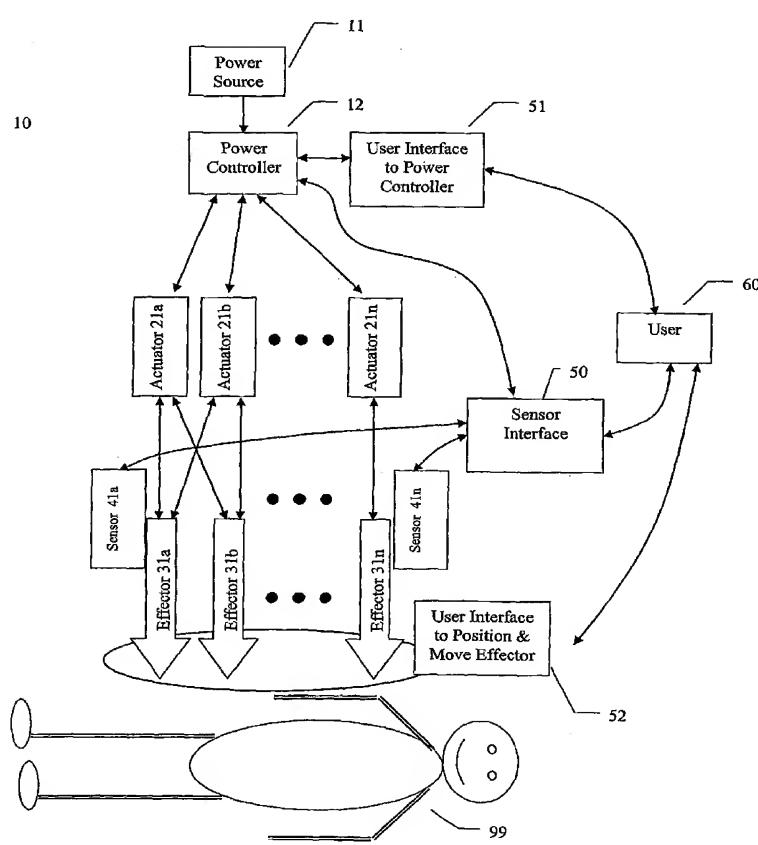
(74) Agent: **BRADLEY, Gregory, L.**; Medrad, Inc., One Medrad Drive, Indianola, PA 15051 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

*[Continued on next page]*

(54) Title: ENERGY ASSISTED MEDICAL DEVICES, SYSTEMS AND METHODS



(57) Abstract: A device for penetrating tissue and removing a biological sample includes a biological sampling element to remove a biological sample. The biological sampling element includes a passage therethrough. The device further includes a penetrator (101) positioned within the passage. The penetrator (101) is energized in a repetitive manner to assist in penetrating tissue. The biological sample element can be adapted to remove a tissue sample or a biological fluid sample (for example, blood). A device for penetrating tissue and positioning a tissue resident conduit (for example, a catheter (400)), includes a tissue resident conduit (for example, a catheter (400)) including a passage therethrough; and a penetrator in operative connection with the catheter (400). A device for inserting a tissue resident conduit includes at least one component that is energized during penetration to assist in penetrating tissue.



**Published:**

— *with international search report*

**(88) Date of publication of the international search report:**

12 January 2006

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*